Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. *(Currently amended)*

A method of bonding a metallic membrane with a metallic part comprising:

directly physically contacting a smooth surface of a metallic membrane comprising palladium against a smooth surface of the metallic part without any intervening material being present between the two contacting surfaces and mechanically pressing the metallic membrane and the metallic part together at a pressure in the range of about 1,000 psig to about 3,000 psig;

heating the directly physically contacting metallic membrane comprising palladium and the metallic part to a temperature above the half melting point of the metallic membrane while subjecting the metallic membrane and metallic part to a controlled environment of a reducing gas atmosphere.

2. *(Cancelled)*

3. *(Cancelled)*

4. *(Original)*

The method of claim 1 wherein the heating to a temperature above the half melting point is to a temperature between 450°C and 1100°C.

5. *(Cancelled)*

6. *(Cancelled)*

7. *(Original)*

The method of claim 1 wherein the metallic membrane is 75%/wt Pd-25%/wt Ag alloy.

8. *(Original)*

The method of claim 1 wherein the metallic membrane is Pd-Ru alloy.

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9. *(Cancelled)*

10. *(Cancelled)*

11. *(Previously presented)*

     The method of claim 1 wherein the mechanical pressing, the heating and the subjecting to a reducing gas atmosphere are carried out for about 24 hours.

12. *(Previously presented)*

     The method of claim 1 wherein the mechanical pressing, the heating and the subjecting to a reducing gas atmosphere are carried out for about 30 hours.

13. *(Cancelled)*

14. *(Cancelled)*

15. *(Cancelled)*

16. *(Cancelled)*

17. *(Previously presented)*

     The method of claim 1 further comprising:

     polishing the surface of the metallic membrane; and

     polishing the surface of the metallic part prior to the mechanical pressing.

18. *(Currently amended)*

     The method of claim ~~14~~ 1 wherein the reducing gas is hydrogen ~~is~~ at a pressure of 15 psig.